

REMARKS

Claims 1 – 16 are pending in the present application. Applicants amend claims 1 and 9.

No new matter is added.

REJECTION UNDER 35 U.S.C. § 103

Claims 1 – 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S.

Patent No. 6,542,581 to Suonsivu et al. in view of U.S. Patent No. 6,292,515 to Kao et al.

Applicants amend claims 1 and 9 to clarify the nature of their invention, and respectfully traverse the rejection.

In our Response of June 4, 2004, Applicants made the following arguments:

Applicants disclose a method and an apparatus for interconnecting a user and a communications center by DSL communications over a 2-wire telephone line. In accordance with Applicants' claimed method, a signal-to-noise ratio (SNR) of a DSL communications is monitored, and when the SNR is determined to be outside a predetermined range for a duration longer than a reference time, the communication is interrupted and reconnected in order for a new communication mode and communication speed to be negotiated to achieve a desired SNR. Applicants' claimed approach simplifies prior art approaches in which dynamic rate adaptation countermeasures are used (see, e.g., pages 1, 2 of Applicants' specification).

Suonsivu discloses a method for controlling transmission power in a DSL line (see, e.g., abstract of Suonsivu). According to the method of Suonsivu, SNR is monitored and power is adjusted when SNR exceeds a threshold value and bit error rates (BERs) continue to be in an acceptable range (see, e.g., FIG. 3 of Suonsivu). Unlike Applicants' claimed invention, the method of Suonsivu does not suggest or disclose determining whether SNR exceeds a threshold value for a duration longer than a reference time. In addition, as noted by the Examiner and unlike Applicant's claimed invention, the method of Suonsivu does cause communication to be interrupted and reconnected in order for a new

communication mode and communication speed to be negotiated to achieve a desired SNR.

Kao discloses a multi-channel data transmission apparatus that dynamically adapts the bit and energy configurations of multiple sub-channels in order to achieve a desired communications performance level (see, e.g., abstract of Kao). This approach is similar to the complex adaptive negotiation methods discussed by Applicants as part of the prior art. In sharp contrast, Applicants' claimed approach improves over such complex prior art methods by simply causing communication to be interrupted and reconnected on a given channel in order for the communication to be automatically adjusted to achieve desired performance levels. Kao does not disclose or suggest Applicants' claimed communications interruption as a means to adjust communications performance. In addition, Kao also fails to disclose or suggest Applicants' claimed step of determining whether SNR exceeds a threshold value for a duration longer than a reference time.

The Examiner finds these arguments to be unpersuasive, suggesting that Applicants' claimed controlling unit causing "said DSL-interface containing unit to interrupt said intercommunication once and to reconnect said user and said center thereafter" is simply a "showtime function for performing an intercommunication after the establishment of the negotiation" as described at page 6, lines 5 – 6 of Applicants' specification. However, as described at page 7, line 16 through page 8, line 22, Applicant's claimed controlling unit, unlike the showtime function, causes an interruption of the intercommunication in order to instigate a reconnection process that restarts a negotiation process.

As recited, for example, in amended claims 1 and 9, the reconnection process instigated by the interruption "performs a handshake and an initialization so as to establish a negotiation for performing intercommunication with a DSL interface containing unit on the other side of the 2-wire telephone line". As a result of this additional negotiation process, the DSL-interface containing unit establishes a communication mode and communication speed agreed to by the DSL-interface containing unit on the other side that will maintain the desired signal to noise ratio (see, e.g., page 7, line 32 – page 8, line 15 of Applicants' specification).

In this manner, Applicants' claimed approach eliminates the need for an additional adaptive system such as disclosed by Kao for performing compensation after modem initialization. Rather, Applicants' claimed invention simplifies over prior art post-initialization control functions by instead employing an interruption and reconnection process that enables a standard intercommunication sequence to be employed for adapting communications to maintain a desired service quality level.

In other words, Applicants' claimed process uses standard intercommunication means used at the time of initialization for post-initialization fine tuning. This eliminates the need, for example, to implement an additional post-initialization fine tuning process and/or system as taught by Kao, and allows for a simplification and cost reduction of the DSL communication device (see, e.g., page 2, line 11 – line 22 and page 9, line 34 through page 10, line 11 of Applicants' specification). Significantly, Applicants' claimed invention enables fine tuning to be performed with any other DSL device so long as that DSL device is capable of performing an intercommunication process for initialization.

Applicants respectfully submit that the interruption and reconnection features for fine tuning taught by Applicants' claimed invention are neither taught nor suggested by either of Suonsivu and Kao. Accordingly, Applicants respectfully submit that independent claims 1 and 9 are not made obvious by any combination of cited references, and are therefore allowable. As claims 2 – 8 and 10 – 16 each depend from one of allowable claims 1 and 9, Applicants further submit that claims 2 – 8 and 10 – 16 are allowable for at least this reason.

CONCLUSION

In view of the amendments and set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner

should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'TJ Bean', with a long horizontal flourish extending to the right.

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